THE REVEREND W. AWDRY'S RAILWAY SERIES

SURPRISE PACKET

DESIGN:
PETER
EDWARDS

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Here is a Surprise Packet for you from Thomas and his friends. Take care of it, and it will give you lots of fun for a long time.

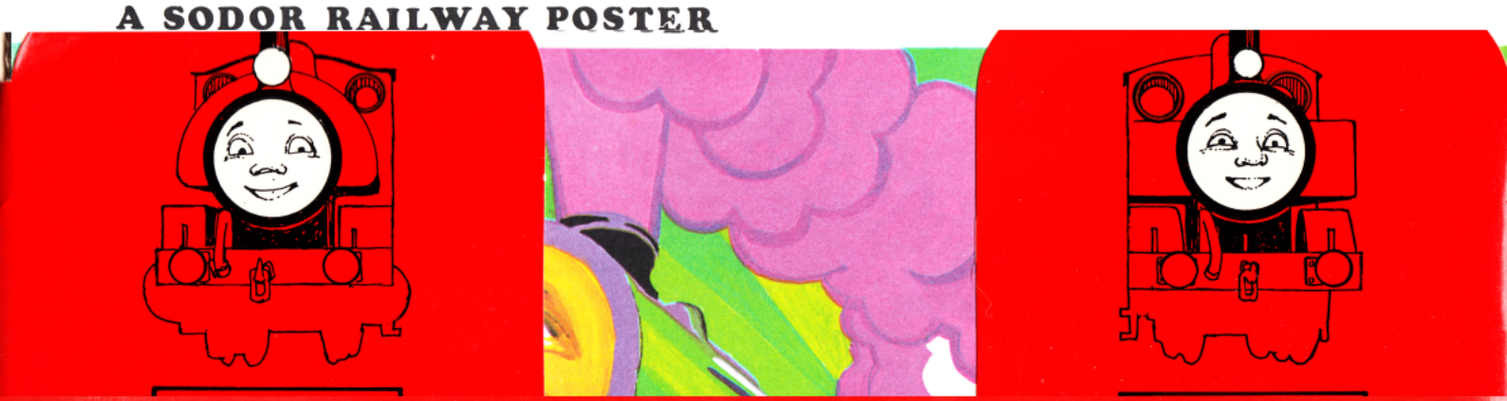
You can keep the boards of the Tidmouth Grand Tour and the Knapford Junction Game nice by covering them with stick-on, see-through plastic. For the Tidmouth Grand Tour why not make your own engines and spinner by copying or tracing the drawings?

You can make Bill and Ben's surprise, and your working model of Skarloey, too, without cutting the sheet. If you copy or trace the pictures you can make as many "Skarloeys" as you like and race them with your friends.

We hope you will like the stories and puzzles too. We have made them specially for you.

W. AWDRY
P. EDWARDS

A SODOR RAILWAY POSTER



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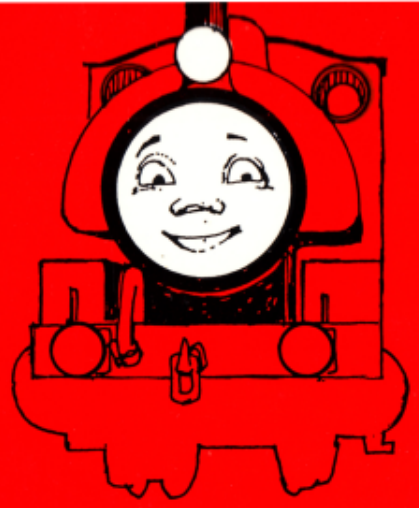
SODOR RAIL

DESIGN: PETER EDWARDS

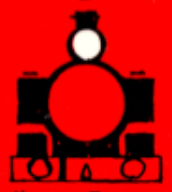


THIS IS WHAT THE HEADCODES MEAN

Class A

Express; Breakdown; Snowplough

B



Ordinary Passenger; Branch Line

C

Perishable Goods; Express Parcels; continuous brakes throughout

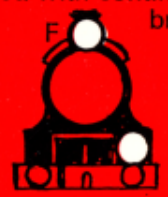
D

Fast Freight; ⅓ train fitted with continuous brakes

E

Medium Freight; at least 4 vehicles with continuous brakes

F



Express Freight without continuous brakes

H

Through Freight; Ballast Train

K

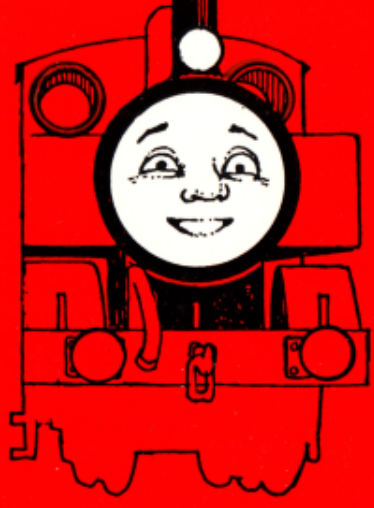
Pick Up Goods; Branch

J

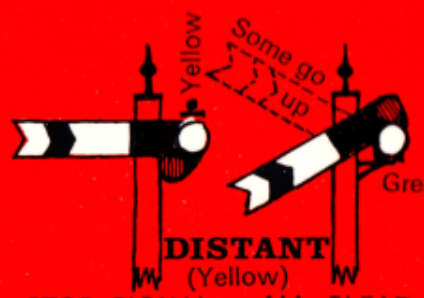
Mineral; Empty Wagon Train

G

Light Engine

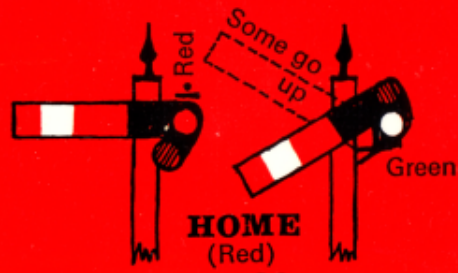


THIS IS WHAT OUR RAILWAY SIGNALS MEAN



STOP SIGNAL AHEAD

ALL CLEAR AHEAD



STOP

GO

Siding SHUT ahead. Wait for train in opposite direction.

Next two sections in use.

Section ahead clear. Following section in use.

Line clear on next two sections.

Pull into siding to shunt or make way.

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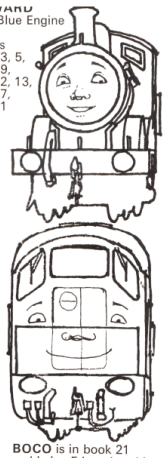
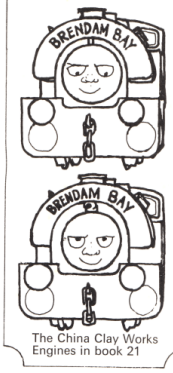
EDWARD The Blue Engine is in books 1, 2, 3, 5, 6, 8, 9, 10, 12, 13, 15, 17, 18, 21



BOCO is in book 21 and helps Edward on his Branch Line to—

BILL & BEN



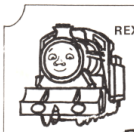
The China Clay Works Engines in book 21

A SODOR RAILWAY POSTER

DUCK He can be seen in books 11, 12, 13, 15, 18, 20, 21, 22, 23, 24 and runs the Little Western Line with—

OLIVER The Western Engine. He is in books 23 and 24. They go to—

REX

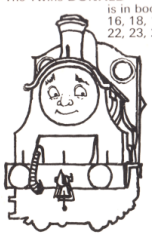


BERT the Arlesdale Railway.

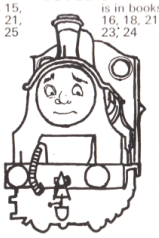
MIKE

The Little Engines are in books 22, 24 and 25

The Twins **DONALD** is in books 15, 16, 18, 19, 21, 22, 23, 24, 25



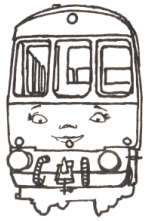
DOUGLAS is in books 15, 16, 18, 21, 22, 23, 24



STEPNEY The 'Bluebell' Engine visits in book 18

Tram Engine **TOBY**

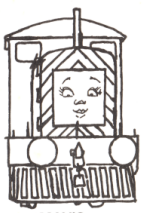
comes to Thomas's Branch Line in books 7, 8, 9, 11, 12, 13, 16, 18, 26



DAISY The Diesel Rail Car comes in books 16 and 26

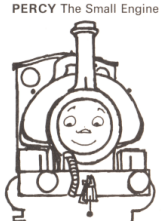
Tank Engine **THOMAS**

is in books 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 15, 16, 18, 21, 26



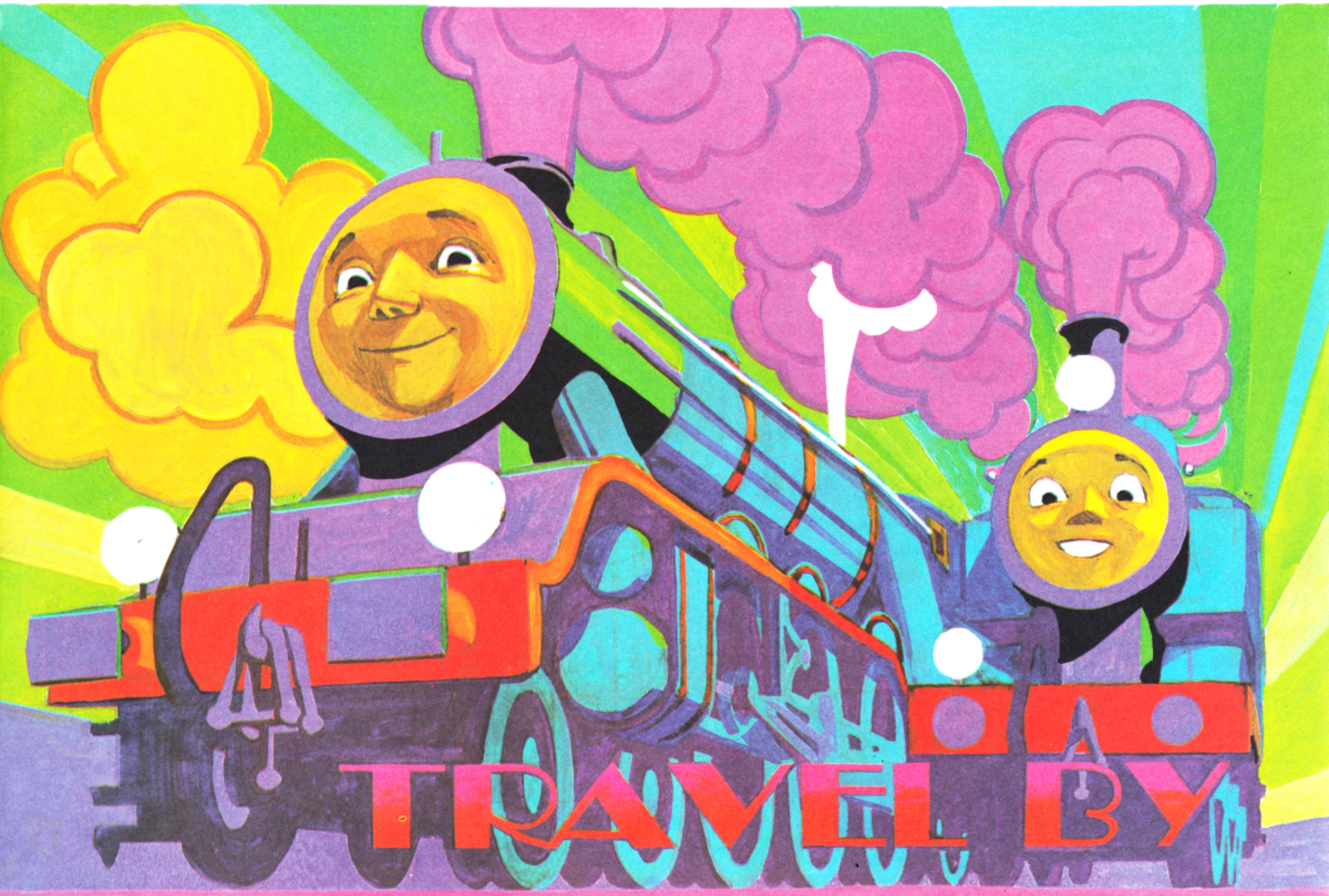
MAVIS helps Toby in book 26

PERCY The Small Engine



is in books 5, 6, 7, 8, 9, 11, 12, 15, 16, 18, 26

A SODOR RAILWAY POSTER



TRAIN

TO ALL PARTS OF THE ISLAND AND TO THE MAINLAND TOO

COMFORTABLE! *COLOURFUL!!*

THE TIDMOUTH GRAND TOUR

A Race Game for up to Six Players

SUGGESTED RULES

THE OBJECT OF THE GAME is to start at VICARSTOWN (top right-hand corner), and see who can get to the LOCOMOTIVE SHEDS (top left-hand corner), first.

EACH PLAYER HAS *ONE THROW EACH,* IN TURN, throughout the game.

TO START, you need not throw a six; but

TO FINISH, you must throw the exact number to get your engine into the shed. If your throw is too high, you must count from where you are, into the shed and out again, and obey the rules for any squares on which you may land.

JUNCTION SQUARES ARE PURPLE.
If you land on a junction square, *you must go along the branch.* If your throw is more than enough to reach the end, it can count towards getting you back again to the Main Line.
Note: On branch lines, the station squares (black), and the penalty squares (white) count both ways; BUT JUNCTIONS COUNT ONLY ONCE. Once a player is back again on the Main Line from a branch, he does not have to go along that branch line twice in any one game.

STATION SQUARES ARE BLACK.
If you land on a station square, you must stop for passengers, or to pick up a load. Take away three from your next throw. If that next throw is three or less, stay where you are.

PENALTY SQUARES ARE WHITE.
If you land on a penalty square, you miss one turn.
Note: There is one exception to this rule: if you land on GORDON'S HILL, you are out of control and crash into the Barber's Shop. From there you must go back to the Works for repairs. At the Works, you miss one turn, BUT AFTER THAT ALL YOUR THROWS COUNT DOUBLE TILL YOU HAVE PICKED UP YOUR COACHES AGAIN AT THE BARBER'S SHOP. THE BARBER'S SHOP PENALTY DOES NOT COUNT TWICE FOR THE SAME ENGINE IN ANY ONE GAME.

BONUS SQUARES ARE GREEN.
If you land on one of these, double your next throw, or have a second throw, as you wish.

PLEASE DON'T SPOIL THIS CARD by cutting the spinner and counters out. Use tracing paper to make copies, which you can stick on to cardboard and cut out. It is a good plan to use a dice from another game instead of the spinner.
Note: You don't have to use the six engines shown. You can draw pictures of any of the others, and use them.

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THE TIDMOUTH GRAND TOUR!

Which Engine will get to the Sheds first?

HENRY GORDON JAMES

BEAR DONALD DOUGLAS

FINISH

LOCO·SHED

65

64 SHED LINE BLOCKED Miss a turn

JUNCTION 63

1

2

3

4

FALL INTO TURNTABLE Miss a turn 6

ARLSBURGH Collect Passengers from Small Railway 5

'BUS STUCK UNDER BRIDGE Miss a turn while it is removed

62

TIDMOUTH 61 Drop your Passengers

60

ELEPHANT IN TUNNEL Miss a turn 59

58

1

2

ELSBRIDGE 3 Pick up Passengers

FISH IN WATER-TANK Miss a turn 4

5

57 JUNCTION

FFARQUHAR Pick up a load of stone from Quarry 6

56 55 54

CRASH INTO BARBER'S SHOP 53 Go back to works

52

51 JUNCTION

3 2 1

BRENDAM A load of China 4 Clay from Bill & Ben

50 GOING WELL Double your next throw

49

OUT OF CONTROL down Gordon's Hill. Go on 5 squares to Barber's 48

47 46

6 5

7

PEEL GODRED 8 Fetch a load of aluminium from Factory

KIRK MACHAN Passengers to and from Mountain Railway 4

3

2

1

JUNCTION 42

CRONK 43 Pick up and set down Passengers

44

DOME BLOWN OFF on windy viaduct. Miss a turn 45

41

40

CLEAR SIGNAL 39 Double your next throw

38 37 36

COW ON LINE Miss a turn 35

34 33

32

START

VICARSTOWN

3

HENRY'S TUNNEL You are stuck here. Miss a turn 2

1

4

5 6

7 STEAMING WELL Double your next throw

8

BALLAHOO Wait for 9 Passengers

13

BRIDGE WASHED AWAY 12 Miss a turn

11 10

14

15

1

2 LOCOMOTIVE WORKS Miss a turn for repairs

16 17

18 JUNCTION

19

CROVAN'S GATE Passengers to 20 & from Skarloey Rly

25 24 23 22 21

26 BRAKES LEAKED ON Miss a turn while you find a leather bootlace!

27

JUNCTION 30

1

KIRK RONAN Passengers from boat 2

ROLF'S CASTLE 31 Stop for Passengers

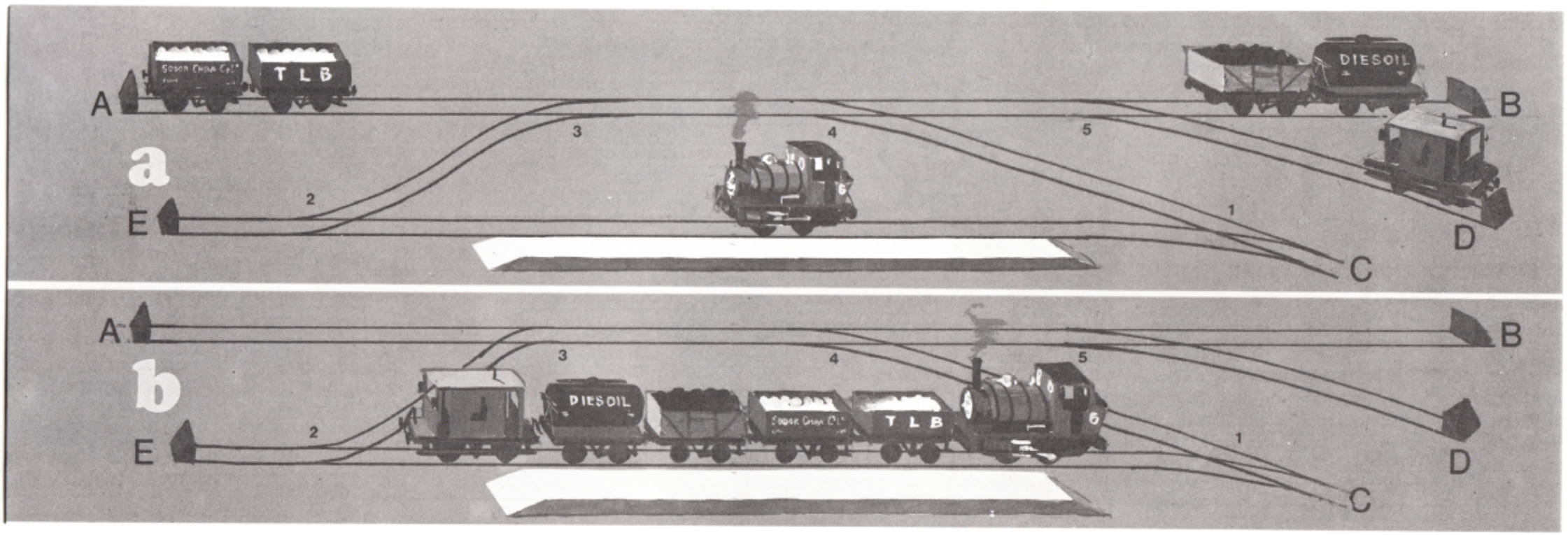
28 29

PUZZLE PAGE

Are you good at shunting? See if you can do these puzzles.

PUZZLE I (*see picture on the right*)
Mavis, the diesel from the Quarry, has been careless. She brought two trucks down, but left them at the wrong depots as you can see. The Station Master has asked Toby to take truck A to depot A and truck B to depot B before he takes his coaches Henrietta and Elsie away down to the junction.

At his first try Toby got the trucks in their right places, but found himself trapped on the loop line between them. That was no good, so he tried again and this time he ended up on the Main Line and was able to couple up to Henrietta and Elsie and take them away. How did he do it?



PUZZLE III (*see picture on the right*)
On the Skarloey Railway one day Rheneas was coming down from the station by the Lake. He had four coaches and Beatrice, his guard's van. His Driver stopped him at Quarry siding. "Peter Sam's coming up with a train," he said, "and we must pass him here. The trouble is that Quarry siding can only hold four coaches and an engine, or four coaches and a guard's van. Peter Sam's train is the same length as ours, so we'll have to make a plan."

So Rheneas and his Driver made a plan together; when Peter Sam arrived they were able to show Peter Sam's Driver and Fireman what to do. There was no swapping or exchanging of engines, coaches, or guard's vans; and after a few minutes each train went on its way just as it was before. How did they manage to pass each other?

Answers on page 24.

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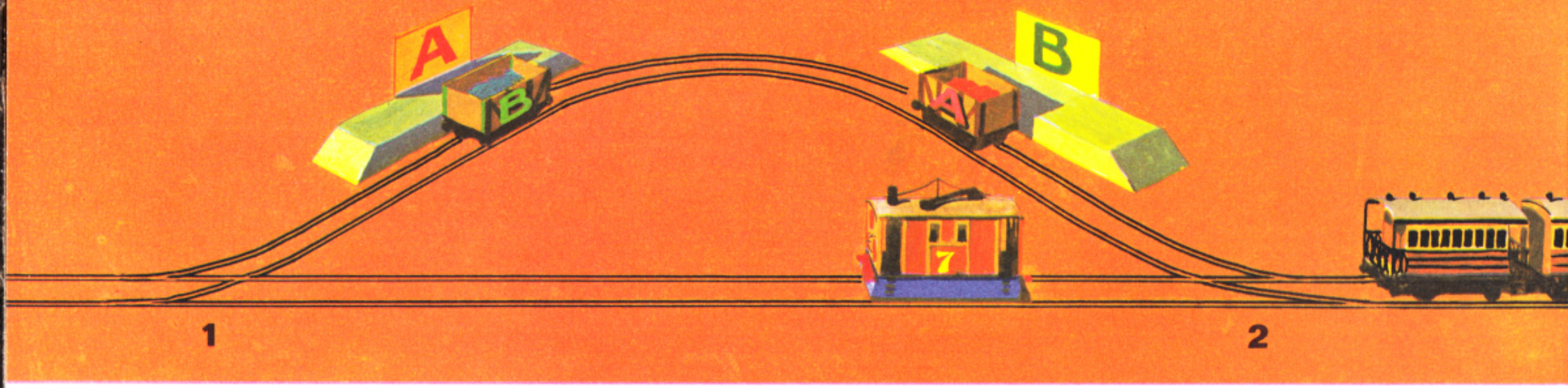
PuzzlePage *See if you can do these*

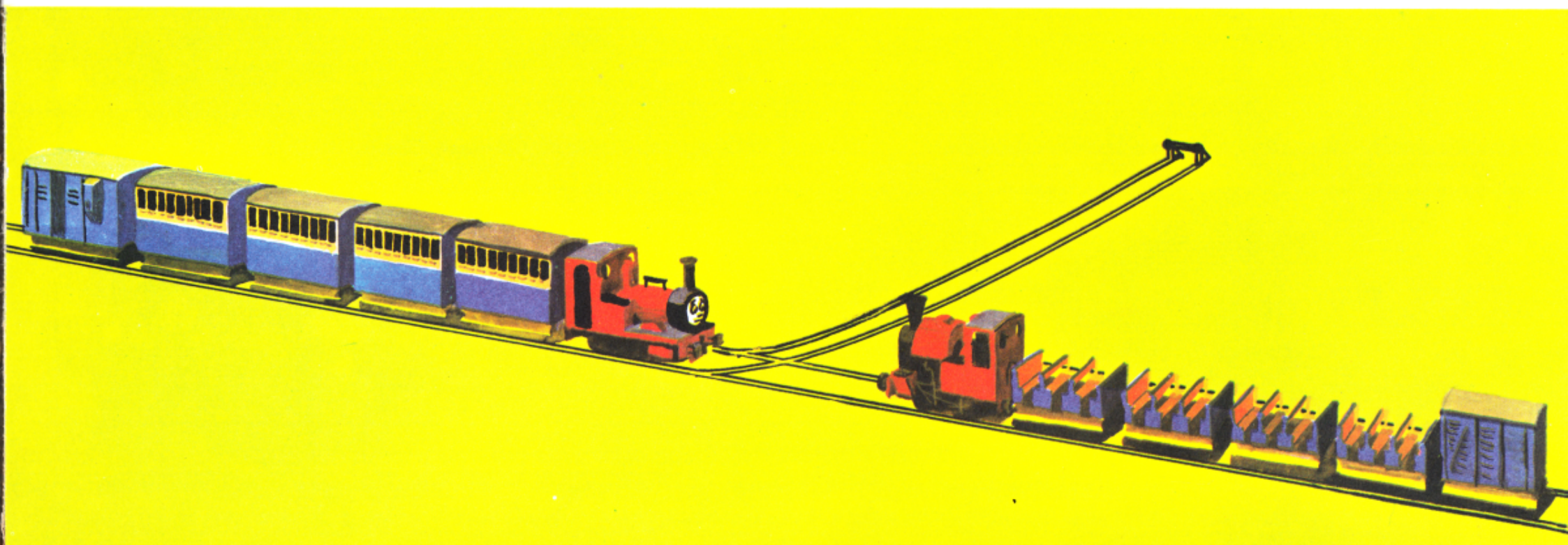


PUZZLE II (*see picture on the left*)

Look at drawing (a). Percy is at Ffarquhar Station standing at the platform. He and his Driver are wondering how to collect the trucks and arrange them so that Percy can take them away in their proper order.

There is no room on siding E for anything but Percy. The vans on siding A are full of china and mustn't be moved until last, and then very gently. The brakevan *must be at the end* of the train, and the oil tanker *must* be next to it, and separated from the vans by the coal truck.

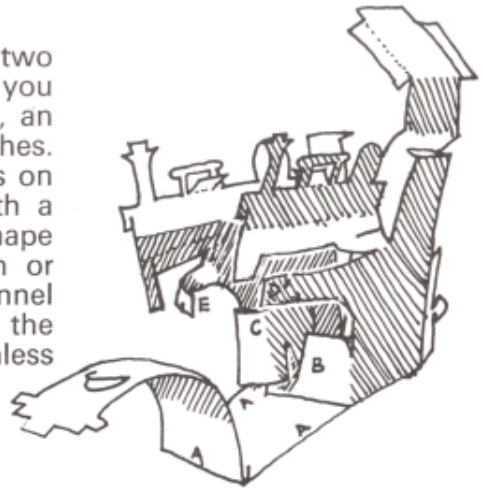
After thinking about it, Percy and his Driver planned a series of shunting moves which arranged the trucks as the Fat Controller wanted them—see drawing (b). How did he do it?

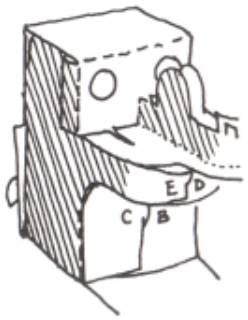


How to Make a Working Model of Skarloey and his friends

The shapes opposite make up two little engines. To make them go you will need a cotton reel, a button, an elastic band and a couple of matches.

But first of all, trace the shapes on card and then cut them out with a sharp knife or scissors. The top shape marked "Skarloey, or Peter Sam or Duncan or Rheneas" has two funnel shapes on it, the inner one black, the outer blue: cut the *inner* line unless you are making Peter Sam.

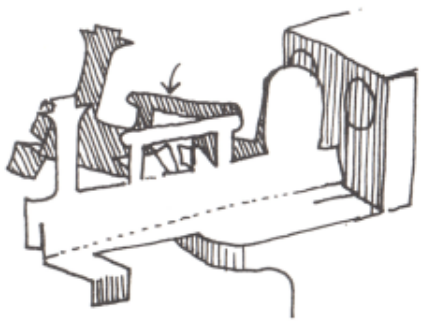


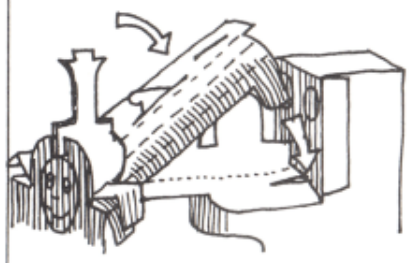


Fold up the dotted lines marked A; then tuck flap B into flap C, and flap D into E. Push the buffers out through the cuts at the back of the cab.

Fold the dotted lines of the cab roof and sides and tuck in behind boiler.

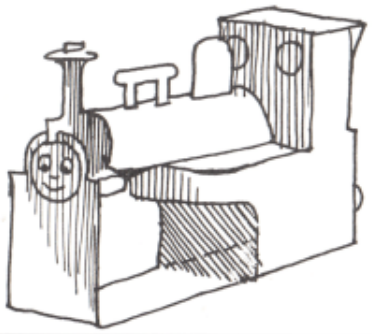
Fold boiler bar flap down; fold flap on opposite side and push it into the slot so that both sides of chimney and dome line up.

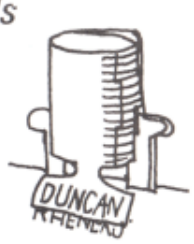




Curve the boiler top (marked "Rheneas") by rolling it against a round pencil, and fold join between face and top. Slip funnel and smoke-box through the hole formed and boiler bar and dome through their slots in the boiler top. Tuck in tabs.

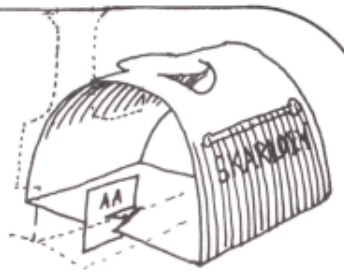
Hook funnels into nick in top of face, and fit ring of funnel in place. Rheneas is now complete.

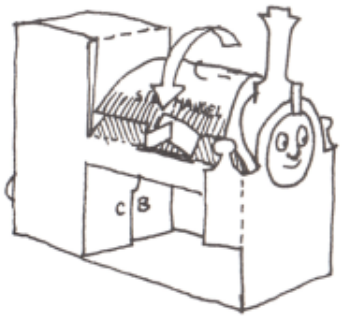




To make Duncan: cut out his dome, form it round, press down lid and fit it over the boiler bar of "Rheneas".

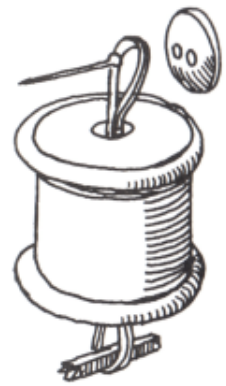
To make Skarloey or Peter Sam: cut out their tanks; curve them on a pencil; wrap them about the boiler between the funnel and the dome; and lock them in place with the little tab AA.



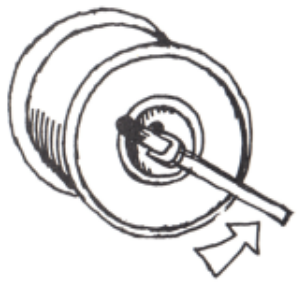


Sir Handel and Duke are made up similarly. The tanks overlap according to the model being made; then tuck in their tabs in the slot on the opposite side. Sir Handel has a different dome, with feed pipes in front, and Duke's sandboxes are tucked under.

Thread the elastic band through the hole in the cotton reel. Break a match off short and put it through the loop of elastic band on one side of the reel. Push the loop at the other end through one of the holes of a button from the smooth side, with the aid of the knob end of a pin. Push another match through the loop through the button, one end of the match being long enough to stick out over the edge of the reel.



Wind the match up a dozen or so turns; fit the reel into the gap in one of the engines, and let it go. Don't expect it to run straight! If you make several engines, you can use a match-box as a station and see which one can get there!



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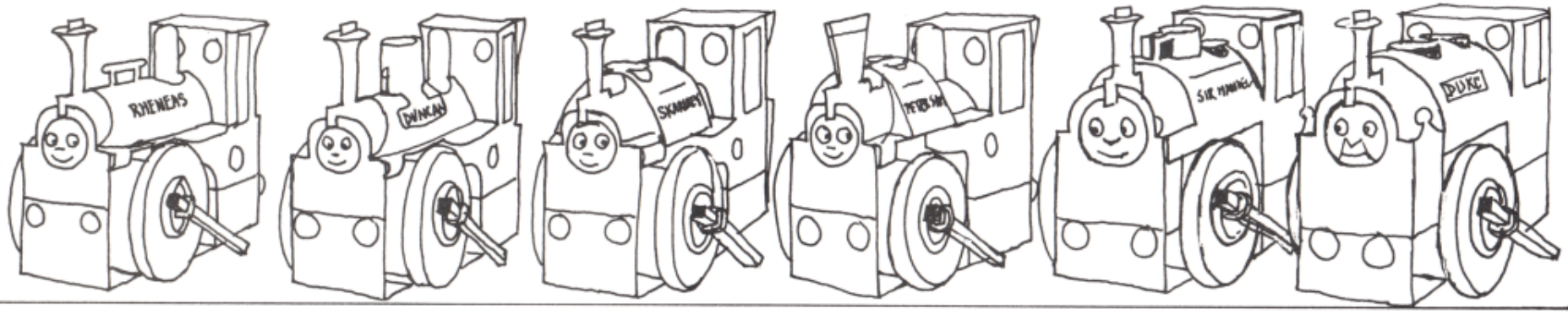
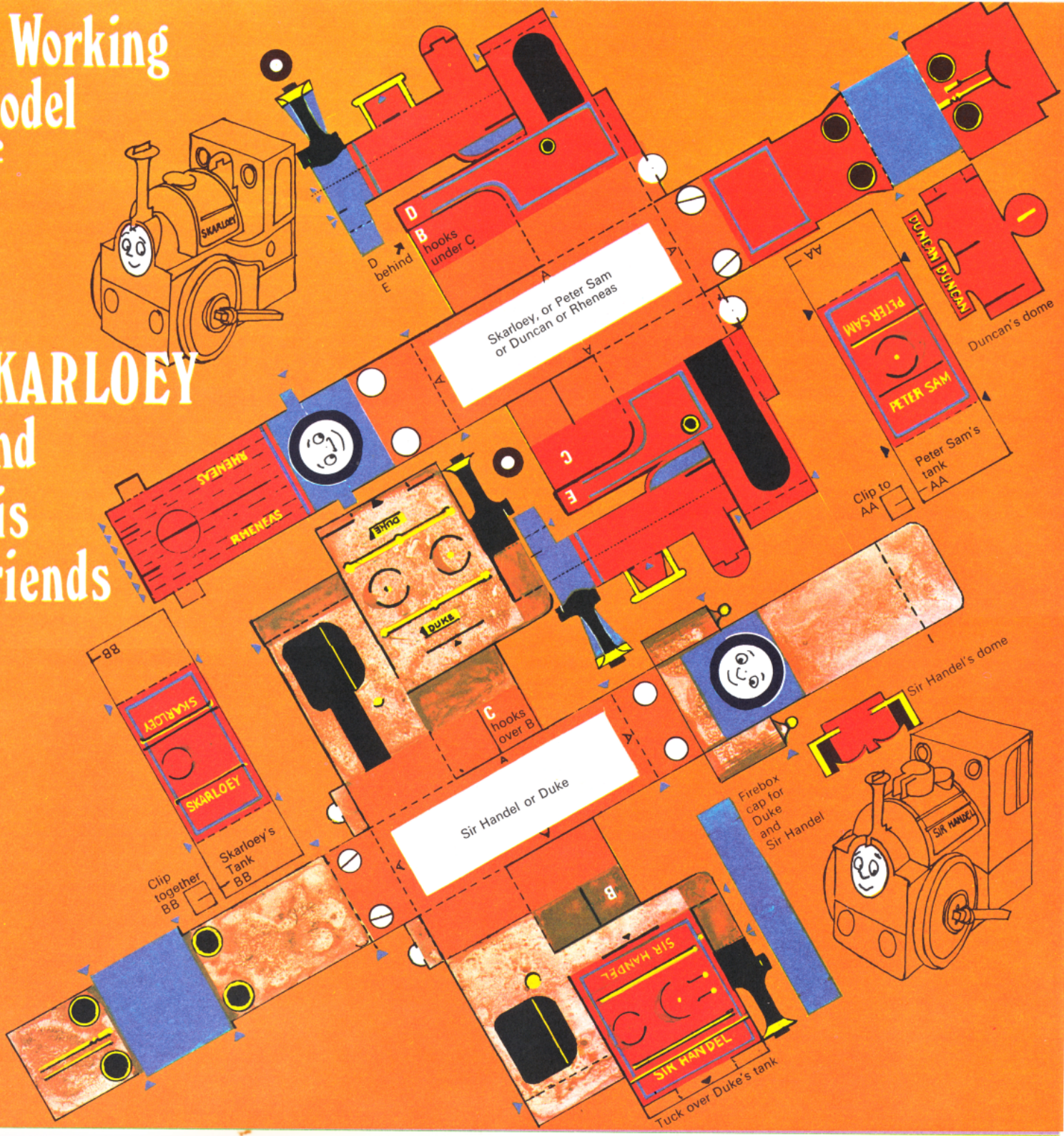


A Working Model of SKARLOEY and his friends



HOW DOES A STEAM ENGINE WORK?

Let's start from your mother's kettle. Steam pours from the spout when it boils. If you plug the spout the steam makes the lid jump up and down. If, further, you were silly enough to plug the holes in the lid and fasten it down too, what would happen? Don't try it! I'll tell you. The kettle might burst, and you would be hurt. Steam is very powerful stuff!

Picture 1 shows part of a steam engine with one side cut away so that we can see inside. Where is the *firebox*? That's easy. It is on the right-hand side where the fire is. Where is the *smokebox*? It is on the left where the chimney is. Between the two is the *boiler.* The boiler is only partly filled with water, and the space left is used for collecting steam.

How is the water turned into steam? In an electric kettle there is a ring, or element, which gets hot and boils the water. In a steam engine a number of tubes run right through the water in the boiler. All the hot gases from the fire must go through them to reach the smokebox and chimney. These tubes get extremely hot and, like an electric kettle's element, boil the water and make steam.

Your kettle has holes in its lid. These are for safety, so that steam can escape harmlessly. An engine has safety holes too. The two small pillar things over the firebox are safety valves. They are spring loaded so that if there is too much steam, some of it can escape.

Now think of the spout of your kettle. Steam pours from it, but uselessly, doing no work. In an engine steam rises above the water and collects especially in the humpy part you can see, and which is called the *dome*. Look carefully, and you will see a large pipe going from the dome, and down through the smokebox to the cylinders. (We'll come to those in a minute.) Think of that pipe as the spout of your kettle. There is however one big difference. In a kettle steam pours freely from the spout; but in an engine, a valve in the dome enables the driver to stop steam going down the pipe unless he wants it to. This valve is called the *regulator*, and the driver uses a lever in his cab to open or shut it. In this way he can regulate the amount of steam going to the cylinders, and so control the speed and power of the engine—for it is in the *cylinders* that the steam is put to work.

Most steam engines have two cylinders, some have three, and others, four. Inside each cylinder is a steel disc or *piston* which fits it exactly—not too loose, not too tight, but just right. Bolted to the piston is the *piston rod.* This rod goes through a hole at one end of the cylinder, and this hole is made steamtight by packing. Rod and piston must be able to slide backwards and forwards easily in the cylinder, but they must fit so exactly that no steam can escape.

Outside the cylinder, the piston rod is fastened to a *crosshead* which slides to and fro between guide bars, and a *connecting rod* joins the crosshead to the *crank* on the *driving wheel.*

Each cylinder has two other openings, one at each end. These are called *ports*. Valves worked by the engine wheels arrange that *one port only* is open to live steam at any one time. If the Driver opens his regulator allowing steam into the *back* of the cylinder (picture 2), it will push the piston *forward,* and by means of the piston rod crosshead and connecting rod, it *pulls* the driving wheel round *in a forward direction* for nearly one half turn; but it can't do more than that, so as the piston moves forward, the valve shuts steam off from the back port, and opens the front one. Steam can now come in to push the piston back again, and in doing so *pushes* the driving wheels round *in the same direction as before* for another half turn.

But what about the steam already in the cylinder? Won't it stop the steam from the front port from pushing the piston back? Of course it would if it was allowed to stay there; but it isn't. The valves are so arranged that when the front port is open for live steam to enter, the back port is open for used steam to escape into the smokebox and up the chimney. This is what is happening every time an engine puffs. Each puff is the sound of exhaust steam escaping from one of the cylinders. But the exhaust steam still has useful work to do.

As it puffs into the smokebox, the exhaust steam passes close to the ends of the boiler tubes and, by its rushing force, sucks the hot gases from the fire with it up and through the chimney. This in turn draws air into the firebox making the fire burn more fiercely. The fiercer the fire the hotter get the boiler tubes, and the more quickly do they boil the water and make fresh steam; and the faster steam is made the greater the power the engine can develop.

There is, of course, much more to it than that; but this is the basic principle of how steam is turned into power.

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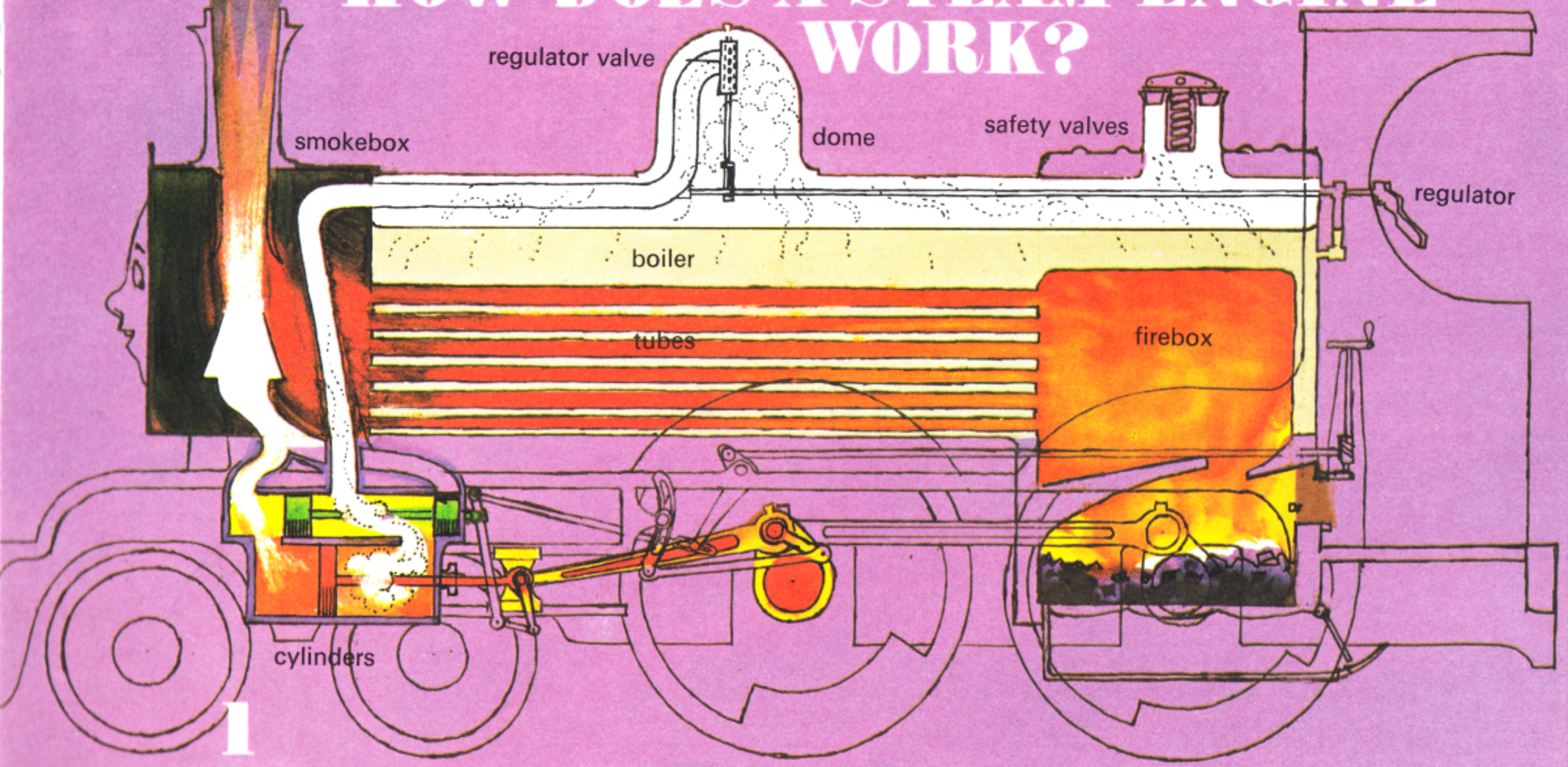
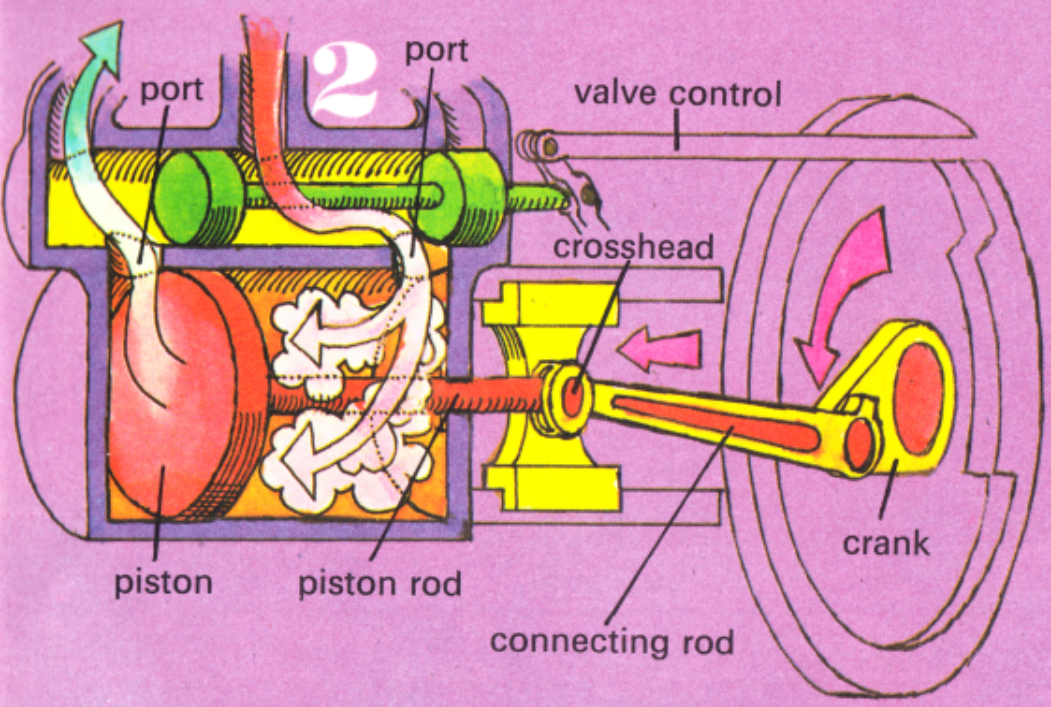
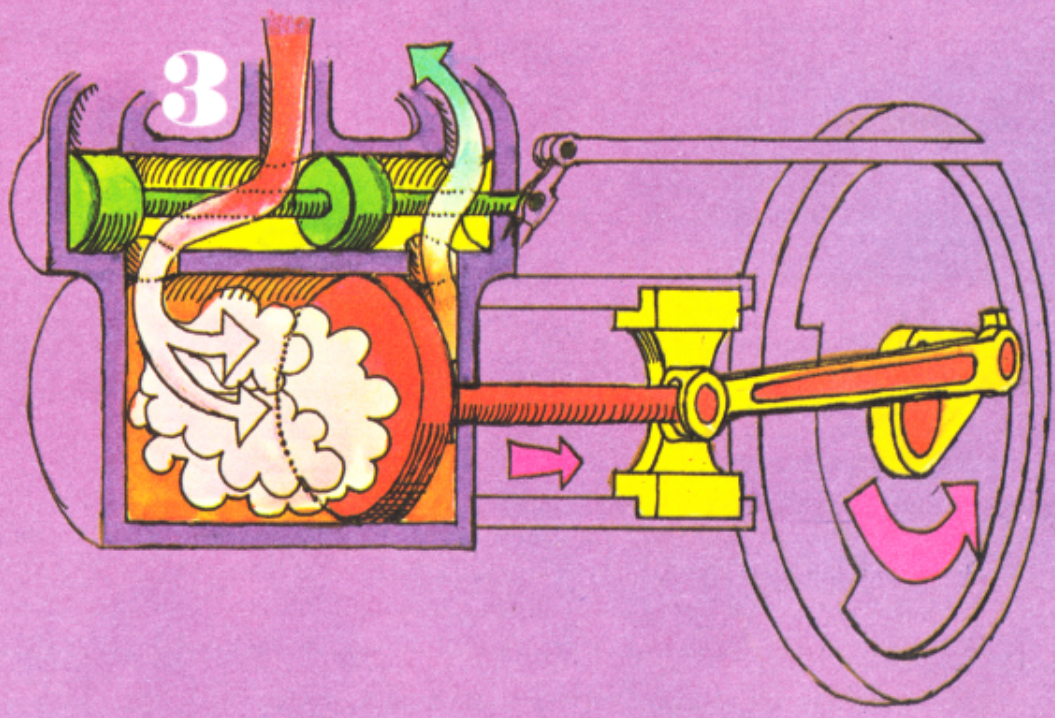
HOW DOES A STEAM ENGINE WORK?







THE FIRST RAILWAY ENGINE IN THE WORLD

Try to imagine a time when no one could travel faster than the fastest horse, and no heavier loads could be carried than those within the pulling power of horses. Travellers walked, or rode, or went by post-chaise or stagecoach. Manufacturers and merchants sent their goods by road or canal. Canals were best for heavy goods, for horses could pull heavier loads in barges than they could in wagons along roads.

But canals were not always near at hand. They could often only be reached by road, so factory- and mine-owners laid down tramways to the nearest canal. These tramways or plateways, as they were sometimes called, were a sort of railway made from "L" shaped rails, or plates, of cast iron. These plates were pegged to stone blocks laid in the ground so as to make a smooth way on which the ordinary road wheels of the "trams" or wagons could run. The wheels ran on the flat part of the "L" plates, while the upright part formed a guard to keep the wheels on the track. The smooth surface enabled horses to pull heavier loads.

Samuel Homphray owned the Penydaren Ironworks near Merthyr Tydfil in South Wales. The nearest canal was nine and three-quarter miles away at Abercynon, and he had built a plateway to the canal. For years his horses had hauled wagonloads of iron along it to barges waiting at the canal wharf.

Homphray had an engineer friend named Richard Trevethick. Trevethick had built steam engines for mines. These engines were stationary ones. They pumped water or worked other mine machinery; but Trevethick believed that he could build engines to run on roads and pull loads too. After many experiments, he patented his idea; but he needed money to build his engine. He told Homphray about it. Homphray was interested, and bought a half-share in Trevethick's patent. He also allowed him to use his workshop and tools. Trevethick set to work in 1803.

Meanwhile Homphray told his friends about it. One of them, Anthony Hill, who owned the nearby Plymouth Ironworks, said Trevethick was a crank and that the whole idea was ridiculous. He bet Homphray 500 guineas that the engine could not pull ten tons of iron from Penydaren to the canal. Homphray took up the challenge, and they arranged a day for the trial.

Trevethick's engine was ready on 21 February 1804. The news had spread and people came from far and near to see it. The picture shows how strange it looked. It had one cylinder only which drove a flywheel, and the flywheel was connected to the driving wheels by gears.

Coupled to the engine were a coach and five wagons. Homphray and Hill sat in the coach with their friends, while each wagon held two tons of iron. The wagons also carried an unofficial load of some seventy men. Neither Trevethick nor Homphray had bargained for this extra weight, but it did not trouble the engine. What did cause trouble was the engine's weight, nearly five tons, and the fact that it had no springs. As it chugged along at nearly four miles an hour its weight and speed were too much for the cast-iron tramplates which cracked beneath it, causing the cavalcade to stop while they were replaced. They often had to stop for other reasons, too. Rocks had to be removed, and trees cut back so that the engine could pass. The nine and three-quarter mile journey took four hours.

But the engine had done its work and Hill admitted that he had lost his bet. Richard Trevethick had built the first railway engine in the world.

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THE FIRST RAILWAY ENGINE IN THE WORLD

HOW TO DRIVE JAMES AND THE OTHER STEAM ENGINES

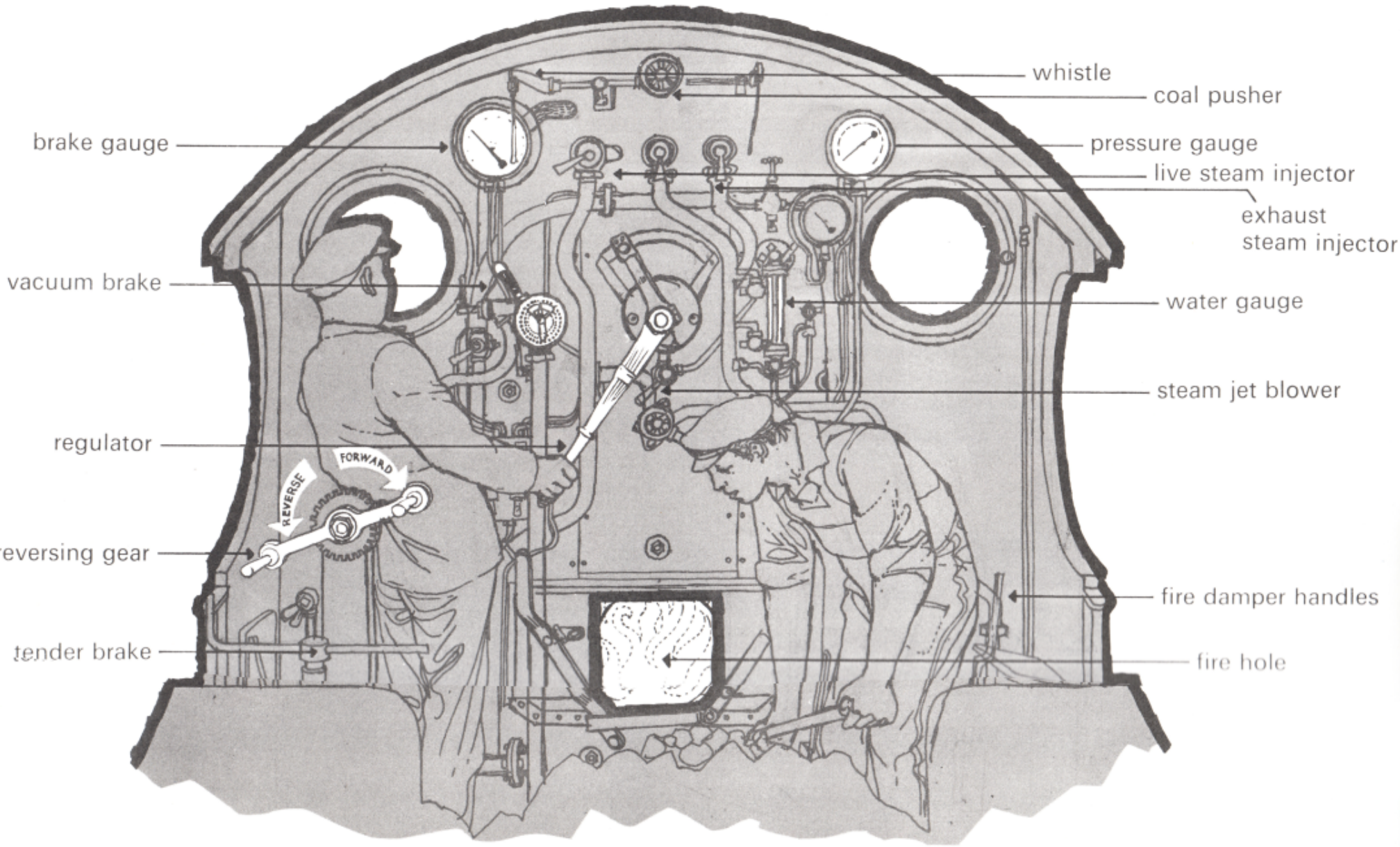
Imagine you are lucky enough to have a pass, and are standing with the Inspector on James' footplate watching his Driver and Fireman at work. The Inspector has shown you some of the instruments and told you their names.

First thing, after coupling up, Driver tests brakes. He pumps air from the train-pipes till the needle reaches 21, then he stops the Ejector. If the needle drops again, there is a fault, and the train can't start till it is found.

All's well here, so he checks the boiler water. The gauge glass should be at least ¾ full. Signals show clear, so Driver next screws his Reverser to "full forward". Fireman meanwhile has been doing a final check-up round the engine. He climbs in and watches for the Guard. "Right away, mate," he calls, releases his Tender Brake, and then gets busy.

Driver opens his Regulator just enough to start James smoothly. Once started he shuts off the Blower, for James' heavy puffs booming inside the firebox are now blowing his fire up to white heat. His cylinders too are warming up so Driver shuts their drain-cocks.

We are now well under way, and Driver screws his Reverser back about one turn. He calls this "notching up". It's like changing gear on a car, but there's a big difference. A car has only three or four gears. A steam engine's Reverser gives it any number you want. Listen to the softening of James' puffs now that he has been "notched up". Driver is listening to their note for



that is how James tells him when he needs more Regulator and notching up.

James is pulling well, but Gordon's Hill lies ahead. It is long and steep, and we'll need more power, so, leaving his Regulator wide open, Driver "notches *down*" on the Reverser to give James extra steam. His puffs are sharper now, and more urgent, and Driver, listening, notches down further when he needs more help.

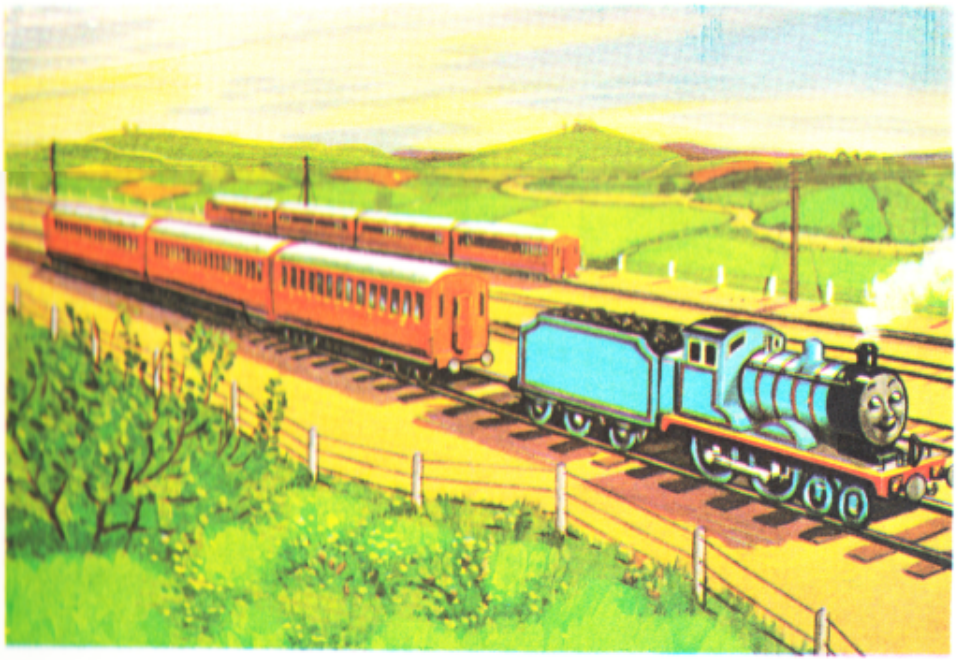
Here we are at the summit, and with a down grade before us Driver lets James "drift". Shutting the Regulator, he notches down to "full forward", then re-opening his Regulator slightly, lets a "whiff" of steam into James' cylinders to "cushion" his pistons.

A Distant Signal ahead warns us that we are near Cronk. Driver turns the brake handle to the left till the needle has dropped to 15, waits till he feels the train check, and then restores it to "running position". By the time the brakes have released we'll be at walking pace and at the platform end. We drift gently in. Notice how Driver brakes lightly again, and then releases before we have stopped so that we come to rest smoothly and with no trace of a jerk.

Your pass finishes here. You thank Driver, Fireman, and Inspector for your ride. You have enjoyed it immensely, and though you wouldn't, by a long way, be competent to drive, you have seen something of how it is done.

HOW SHARP ARE YOUR EYES?

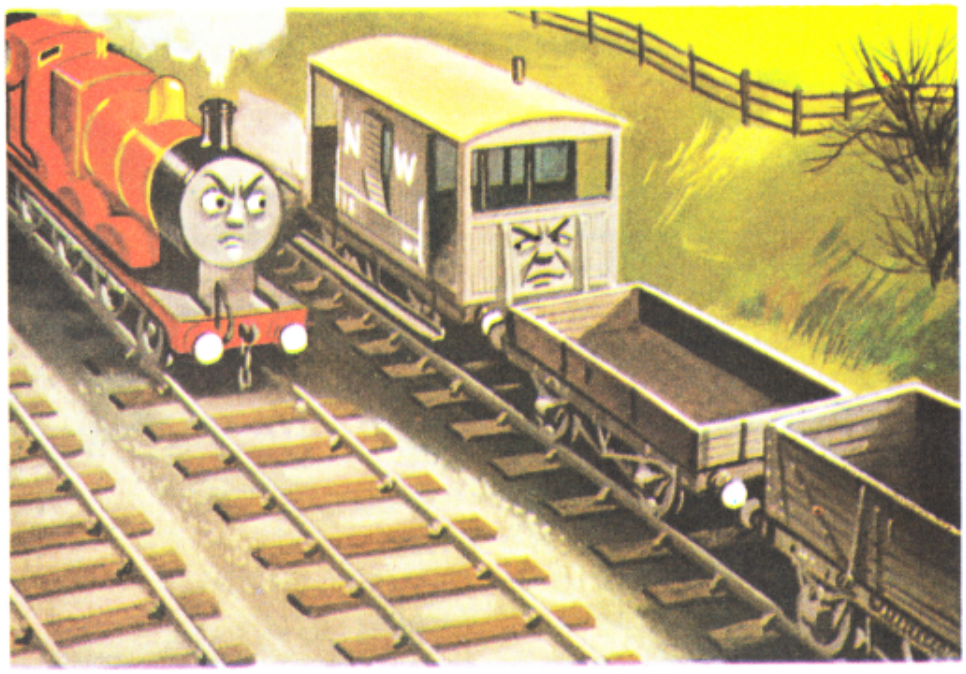
From time to time in the pictures in the books, things have been shown which young readers think to be not quite right, and they have written to tell me about them. Here are four pictures from different books. Each picture has a mistake. Can you find it?



Picture 1. Page 10 THE THREE RAILWAY ENGINES.
Edward goes to find some coaches.

Picture 2. Page 9 TANK ENGINE THOMAS AGAIN.
Henry and Thomas at the Junction.

Picture 3. Page 51 GORDON THE BIG ENGINE.
Gordon, Henry, James and Edward in their Shed watching the painters arrive.



Picture 4. Page 39 THE TWIN ENGINES.
James coming along to take the goods train.

Answers on the other side of this leaf.

HOW SHARP ARE YOUR EYES?

Answers

Picture 1. There is no coupling on the front coach. So Edward can't couple up to pull the coaches away. This is odd, but not a real mistake. As he came up, the coaches said to Edward, ". . . don't bump and bang us like the other engines do". The day before one of the big engines had pulled them so roughly that the coupling on that coach had come right off. The coaches were put back in the siding but the men forgot to mend the broken coupling. Then next morning, when Edward came, they couldn't couple up till they had fitted a new chain and hook. This took some time, so the Guard got tired of waiting and went off home for his "elevenses". That was why, when Edward got to the station (on the next page), he had to wait for the Guard.

Picture 2. The engine really is Henry, but a number of boys and girls have written to say that they think he must be Gordon because he has "square" buffers, and two side-windows in his cab. This is odd, but it isn't really a mistake either.

In *The Three Railway Engines,* when Henry first came he was naughty and wouldn't come out of the tunnel. The Fat Controller said he must stay there till he was good again. When he did come out and helped to pull the Express, he was given a coat of blue paint with red stripes. But tunnels are damp and dirty, and soon afterwards Henry had to go to the Works to be mended.

"Who does Henry think he is?" said the Works Foreman. "We can't afford to get special buffers and a cab for him. He'll have to make do with spare parts we've got for Gordon."

So Henry came out of the Works looking just like Gordon. He was pleased, but Gordon was cross especially when people mixed them up, and thought Gordon was Henry. Gordon was so rude to poor Henry that Henry got quite ill.

He felt better when the Fat Controller had him painted green, and gave him round buffers and his former shaped cab back (in *Troublesome Engines*), but he never got really well again until he was given different coal (in *Henry the Green Engine*).

So that's why Henry looks like Gordon in this picture.

Picture 3. It is James who is wrong. He is shown with four small wheels in front instead of only two. This is a real mistake, and can't be explained like the other two, because he has been drawn properly in all the other pictures in this and other books. It takes sharp eyes to spot this mistake. I never saw it myself till a seven-year-old boy wrote and told me about it two years ago.

Picture 4. Another real mistake. James, as a "light engine", that is an engine not pulling a train, should have a lamp or white disc in the centre of his buffer-beam. The brakevan should have side-lights too. A boy of five wrote and told me about this one!

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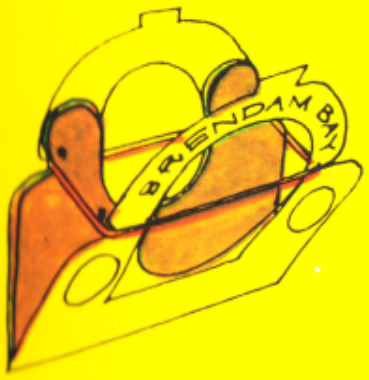
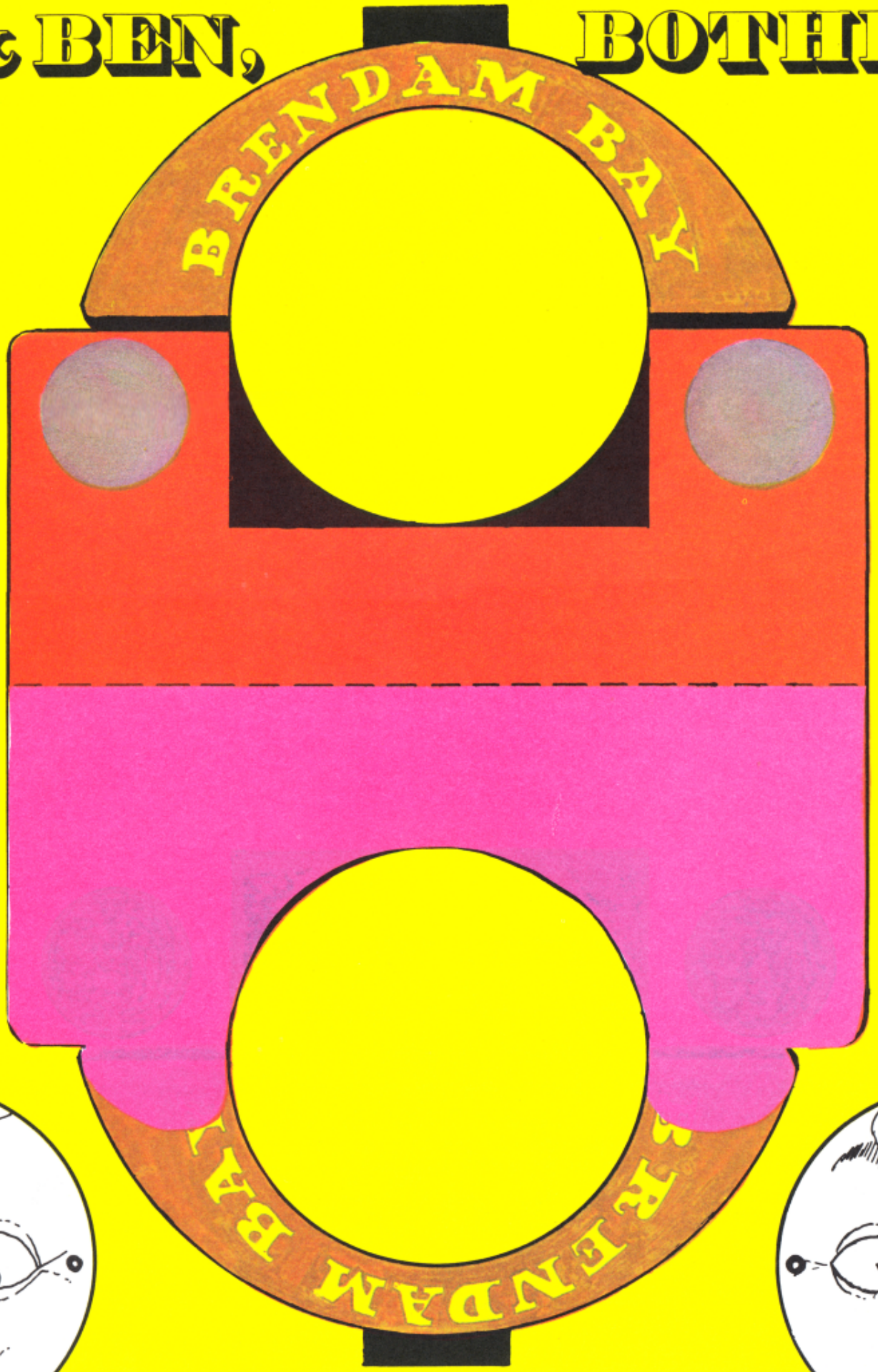
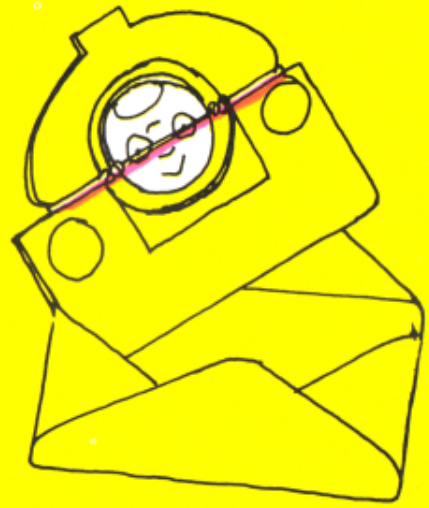
BILL & BEN, BOTHERING!







Trace out these three shapes, in card, and then the pink area in stout board. Cut them out and fold the dotted line; tuck the board inside the fold and clip across an elastic band.

Twist the band and slip the two faces between the loop. Wind it up nice and tight and post it to a dear friend!

KNAPFORD JUNCTION GAME

Knapford Junction is one of the busiest crossings on the Fat Controller's Line. Here Thomas's Branch Line joins the Main Line, and Duck's Little Western Line arrives from the coast. Sometimes the Branch Line trains must wait until the Main Line expresses are clear. Passengers aren't usually delayed, but trucks are another matter. Trucks can only be shunted on to the line when a section is clear, and on a busy junction that isn't often.

Here are six trains waiting to use the junction. Up to six players can choose a train, or trains. Duck must take his five trucks from Tidmouth to Brendam; Oliver must take his from Cronk to Knapford Main Station; Percy must go with his trucks from the Dryaw Lead Mines to the Port; and Edward must go from Brendam to Tidmouth. Donald must take his trucks from Knapford Main to Cronk, and Thomas has a train for the Lead Mines waiting in Knapford Port.

To make your engines and trucks, trace the shapes from the board on to stiff paper; colour your shapes green, orange, blue, red and black; now cut them out. Or you could use a coin of the right size to make your circles, and then colour and cut them out. Make sure you have the right number of trucks and of the right colour for your engines before you start the game.

You can move one truck or engine one space at a time, and you take turns, clockwise. If there is another truck in front of you, even if it is one of yours, you can leap-frog over it into the next section *if* the next but one section is empty; if there is another truck beyond that, you can jump another space, and so on until two spaces ahead are either occupied or empty. If you are lucky, and trucks are well spread out, you may get a truck or engine a long way in one move, jumping one truck after another.

You can only jump one truck or engine at a time, and you cannot jump into another train's sidings, out of play. The first one to get his or her train completely into their intended siding is the winner. The order in which the train arrives at the siding isn't important, as long as every truck arrives!

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DRYAW MINES

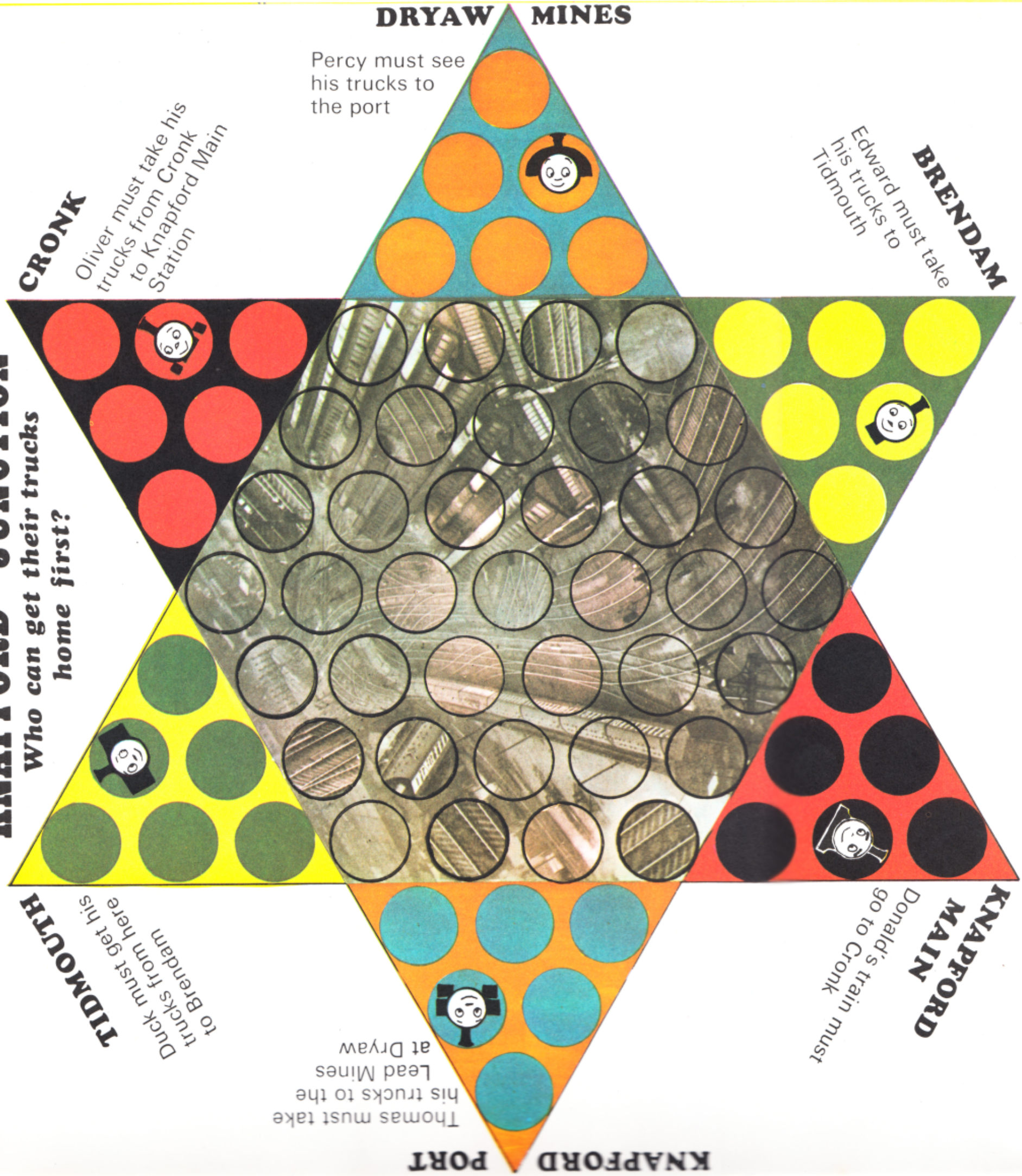
Percy must see his trucks to the port

CRONK

Oliver must take his trucks from Cronk to Knapford Main Station

BRENDAM

Edward must take his trucks to Tidmouth



KNAPFORD JUNCTION

Who can get their trucks home first?

TIDMOUTH

Duck must get his trucks from here to Brendam

KNAPFORD PORT

Thomas must take his trucks to the Lead Mines at Dryaw

KNAPFORD MAIN

Donald's train must go to Cronk

THOMAS'S BRANCH LINE

Here is a map of Thomas's Branch Line. I drew it, and Peter Edwards, our Artist, has made a splendid copy for you to see.

This was the first map I ever made of any of the lines on our Island of Sodor.

It happened like this. You will remember that in *Tank Engine Thomas Again*, Thomas has a race with Bertie the 'Bus. When I had written the story, I read it to my children to see how they liked it. We got to the place where Bertie was fuming at the gates of a level crossing while Thomas sailed gaily through.

Up to that point my children had listened happily, but then they said at once, "That's not fair!"

So I had to write and rewrite that story until they were satisfied that the race really was fair, and we did it by drawing a plan of the Branch Line, and making sure that Bertie was held up by traffic lights and level crossings only the same number of times that Thomas had to stop for stations and signals. Then we found the place where they had the most exciting part—the place where road and rail ran side by side, and where Thomas, after a slow start, really did beat Bertie with no hanky panky at all.

Having drawn the map, the children wanted to find on it where the other stories in the book happened—where, for instance, Thomas went fishing; where he met Terence the tractor, and where it was that Terence pulled him out of the snow, and where the junction was, at which Thomas used to get impatient waiting for Henry.

As time went on and I wrote more stories about the Branch, I found the map very useful indeed. I could find, at once, the place where Thomas fell down the mine; where he got into trouble with the policeman for having no cow-catchers or side-plates; and where Mrs Kyndley lives. It is much easier, you see, to write a story if you know from the map exactly where it happened, and it is easier, too, for the Artist to draw the pictures if he can look at the map and see just what scenery to put in. Peter Edwards is very good at doing this.

In his copy of my map he has marked some of the places where things in my stories happened, but he has not had room to put them all in.

This is where you can have fun for yourselves. Read the stories; look at the pictures and compare them with the map, and they will help you to find out just where Stepney upset the cricket match, and where, for instance, Percy plunged into the sea. It is great fun doing this.

The map will show you another interesting thing. At a place called Toryreck two lines meet. One goes to Knapford Junction where Thomas meets Gordon and Henry and James; and the other winds through the villages and ends at Knapford Harbour. Percy takes stone from the quarries along this line; it passes the Airfield too, and it was along this line that he had his race with Harold Helicopter. Toby comes along it with his coach, Henrietta.

The line through the villages is one of the oldest in the Island. It was there before there was a Big Railway at all, and was called the Tidmouth, Knapford and Elsbridge Light Railway. Many years ago when the Fat Controller was young and slim he drove trains along it hauled by an engine which he had built himself, and which he called "The Coffee Pot", partly because it looked like a large coffee pot on wheels, and partly because it had a habit sometimes of coughing up dirty brown water all over him. He had lots of adventures along this little line, but that, of course, is another story.

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THOMAS' BRANCH LINE

Have you read these stories? This is where it all happened!

a Thomas stuck in the snow

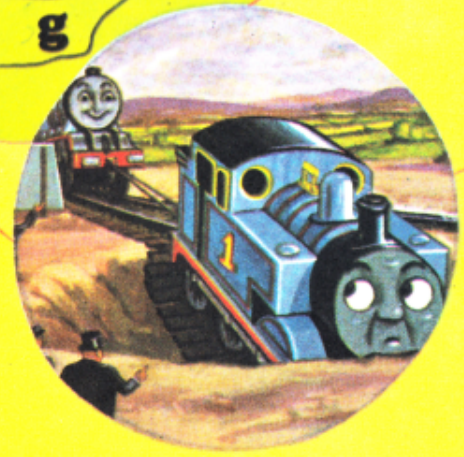
b Mrs Kyndley lives here

c Percy took to sea

d Here are traffic lights

e Thomas spoilt the Stationmaster's breakfast

f Here are fish



g Here Thomas fell down a mine

h Here is Harold

i Daisy met a bull

Hackenbeck

Quarry

Ffarquhar

Elsbridge

Knapford Junction

River Els

Toryreck

Lead Mines

Dryaw

Main Line

0 1 2 3 4 miles

A TRIP ON THE CULDEE FELL MOUNTAIN RAILWAY

Here we are at Kirk Machan Station. I am glad you have brought a warm jersey. Though the sun is hot down here, it can be very cold on top. Culdee and his coach, Catherine, will be glad to see us, and so will his Driver and Fireman. As you, of course, are a Very Special Visitor, the Manager has said that we can sit in front with the Guard.

Ah! Now we're off. It seems strange to hear Culdee puffing and panting from behind. Look out for the other engines as we pass the Shed and give them a wave. From our front seats we have a splendid view of the track, sometimes steep, sometimes not so steep, but always Culdee has to work hard to get us along.

How does he do it? In a way it's like climbing a ladder, only Culdee's ladder has teeth instead of rungs. There it is between the running rails. Can you see the two rows of teeth side by side, and arranged so that a "dip" in one row matches a "tooth" in the other? Culdee's wheels don't drive him along like those of an ordinary engine, they just carry his weight. His "drive" comes from pinion wheels on his axles—the teeth fit into those on the rack rail.

The Snowdon Mountain Railway climbs in just the same way. Indeed, our railway wouldn't have been built if they hadn't given us all sorts of help and advice, so go and see them if ever you get the chance.

We roll over the first viaduct and into Shiloh Station. Look out for the splendid waterfall on the right soon after we start away again. Not many people live up here. There are a few farms, but hundreds of sheep are dotted over the landscape.

In another twenty minutes we reach "Halfway Viaduct" at Skarloey Road. Beyond this, little grows except grass and bushes, and even these disappear when we get to Devil's Back.

Devil's Back is a rough spot in windy weather. Only on calm days are trains allowed to cross the exposed ridge. Look down there at Loey Machan 2,000 feet below. Once over the ridge we strike the steepest part of the line. It seems to rear up into the sky like the wall of a house. But Culdee is undaunted, and shouting defiance, he attacks the grade, lifting us up another 1,000 feet in just less than a mile. Almost before we have realised it, the skyline has dissolved into a glorious view, and we are trundling into Summit Station.

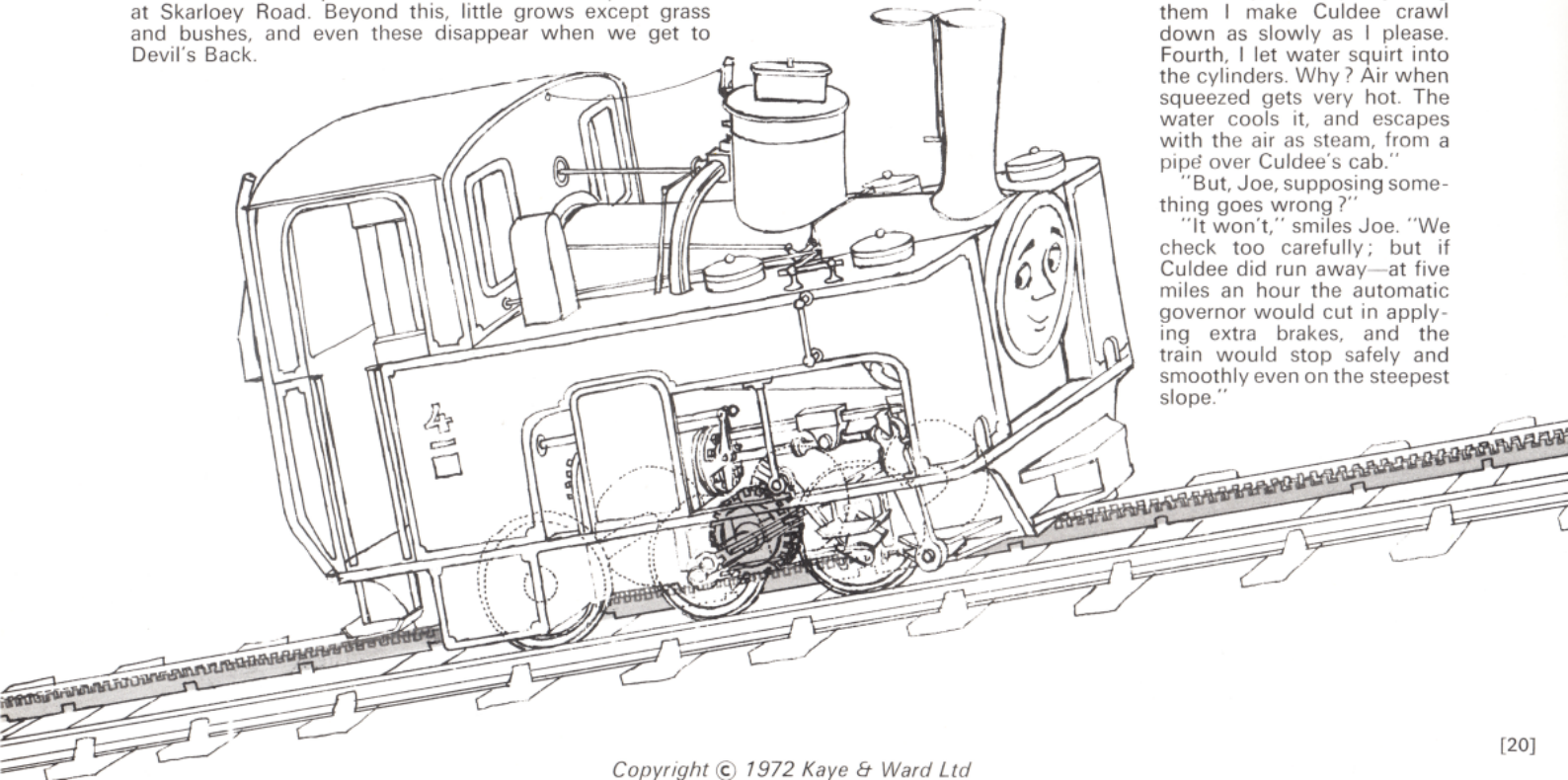
What's that? Well, you do ask questions! No sooner have we reached the top than you want to know what happens when we come down! But it's a good question all the same, and Joe, Culdee's Driver, is the man to answer it. He's just gone into the Refreshment Room. Let's have a hot drink too, and ask him.

"We use no steam at all, coming down," says Joe. "We just roll, using our cylinders as brakes. Going up we had steam in them, giving us power to climb. On the way down they are full of air to stop us going too fast. Think of a bicycle pump," Joe goes on. "Put your thumb on the air outlet, and you can't push the plunger in because air's trapped inside. Now, relax your thumb, and push. The air comes whistling out, but it's hard work. It's like that with our cylinders.

"When I get the 'right-away' at Summit I do four things: First, I turn a valve which closes my steam exhaust and lets air into my cylinders. Second, I release my handbrake letting Culdee 'roll'. Third, I open my air valves just enough to let the pistons force air out slowly, and by adjusting them I make Culdee crawl down as slowly as I please. Fourth, I let water squirt into the cylinders. Why? Air when squeezed gets very hot. The water cools it, and escapes with the air as steam, from a pipe over Culdee's cab."

"But, Joe, supposing something goes wrong?"

"It won't," smiles Joe. "We check too carefully; but if Culdee did run away—at five miles an hour the automatic governor would cut in applying extra brakes, and the train would stop safely and smoothly even on the steepest slope."



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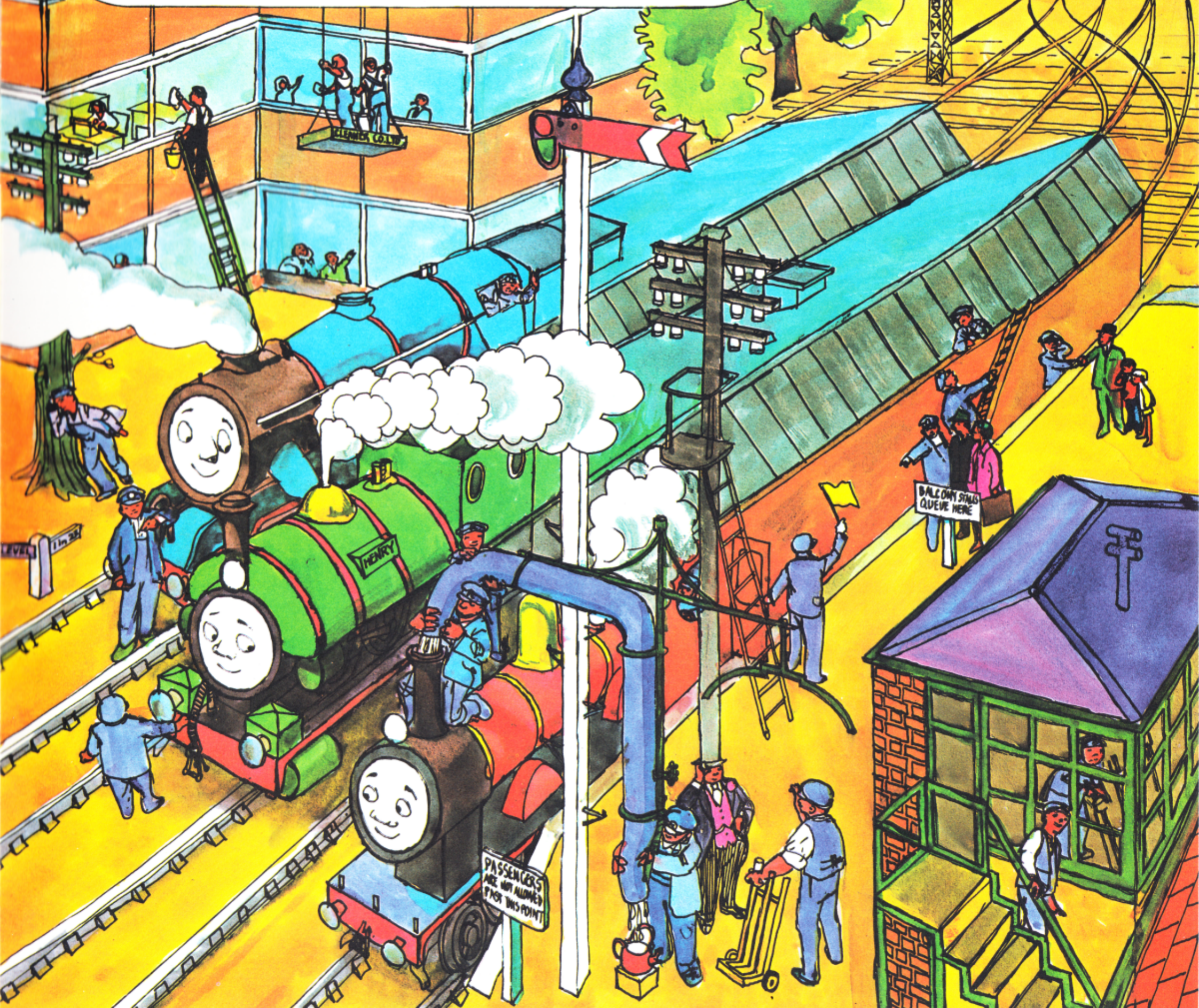
PROBLEM PAGE

An indignant passenger wrote to us, "Why were there no trains on February 30th last?" Well, there were, and here are three of them at the sheds; but the Fat Controller had many problems on his hands and that day nothing went right. How many problems can you find? (*Answers on page 24.*)



HERE BE STEAM ENGINES!

WHERE CAN I SEE THE ENGINES? Boys and girls often ask me that question, so I'll try and answer it here.

Now I must start by reminding you that my engines are "pretend" engines, running on a "pretend" railway in my "pretend" Island of Sodor.

All the same, there are real engines like ours. Some you can see at work, but others are in museums.

Let's start with the working ones:

THE RAVENGLASS AND ESKDALE RAILWAY in Cumberland has Esk, Mite, and Irt; these engines are like our Small Engines—Rex, Mike, and Bert.

THE TALYLLYN RAILWAY at Towyn, in Wales, has Talyllyn, Dolgoch, Sir Haydn, Edward Thomas, Douglas, and Midlander, just like our own Little Engines on the Skarloey Railway (Skarloey, Rheneas, Sir Handel, Peter Sam, Duncan, and Rusty).

THE FESTINIOG RAILWAY at Portmadoc, in Wales, has a very old engine called "Prince" who is like our "Duke".

THE SNOWDON MOUNTAIN RAILWAY at Llanberis, in Wales, is where you must go to see Mountain Engines like those on our own Culdee Fell Railway. There you will see engines like Culdee, Ernest, Wilfred, Alaric, Eric, and Patrick.

THE KEIGHLEY AND WORTH VALLEY RAILWAY in Yorkshire has two engines like Henry, two or three engines which have a likeness to Thomas, and two small saddle-tank engines not unlike Percy.

THE DART VALLEY RAILWAY at Buckfastleigh in Devon has engines like Duck and Oliver.

THE SEVERN VALLEY RAILWAY at Bridgenorth in Shropshire has an engine like Duck, one which is quite like Thomas, and, although it doesn't belong to them, an engine like Henry sometimes runs on their line.

THE BLUEBELL RAILWAY at Sheffield Park in Sussex has, of course, Stepney and other engines mentioned in the book *Stepney the "Bluebell" Engine.*

"FLYING SCOTSMAN" was the second engine to go at a hundred miles per hour. He is the only engine left like Gordon. He came to Sodor too, but is now in America. We don't know when or if he will ever come back. He is working in America, but if he does come back to England he probably won't be allowed to pull trains.

Other engines are not so fortunate. They have been kept safe, but stand cold and silent in museums:

"CITY OF TRURO", who once visited Sodor, is, with several other engines, in the Great Western Railway Museum at Swindon. City of Truro was the first engine to go at a hundred miles per hour.

THE NORTH SOMERSET RAILWAY MUSEUM near Weston-super-Mare has two engines quite like Percy.

THE GLASGOW RAILWAY MUSEUM in Scotland has an engine quite like Edward, and another which is like Donald and Douglas.

You will never see a "Toby". This isn't because he wasn't real, but because there are no engines like him left. I often rode in Toby's cab and was once allowed to drive him for a little way.

Nor will you ever see a "James". There really were engines something like him, but, sad to say, they have all been sent to the scrapyard.

I am sure your father will take you to some of these places, but when you go please remember this: when, for instance, I say that Sir Haydn on the Talyllyn Railway is like our Sir Handel, *I mean that they are alike in shape, but not in colour*; again, the engine like Edward at Glasgow is brown, not blue—and so on with the others.

I have only mentioned a few places. Steam engines can be seen in many others. Perhaps your father knows about this; but if he doesn't there is a book called *The Light Railway Time Table and Guide* in which you can find where other engines are.

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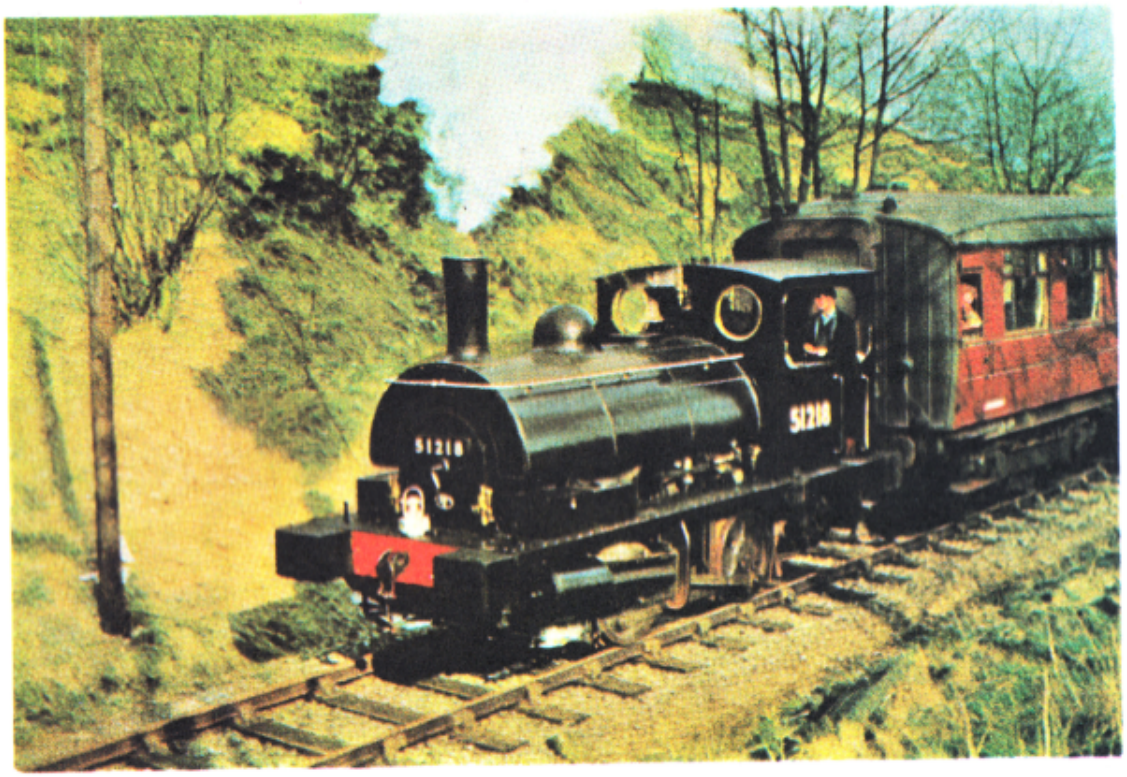
HERE BE STEAM ENGINES!

1. Talyllyn, near Towyn, Wales
2. Keighley and Worth Valley, Yorkshire
3. Bluebell Line, Uckfield, Sussex
4. Ravenglass, Eskdale, Cumberland

1



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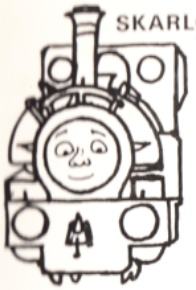
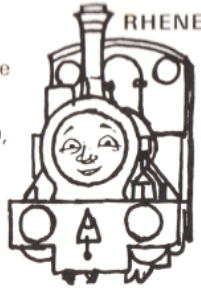
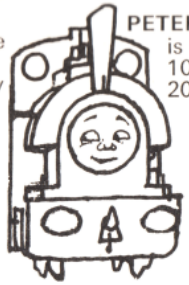


SKARLOEY
The Little Old Engine
He is in books 10, 14, 17, 19, 20, 25



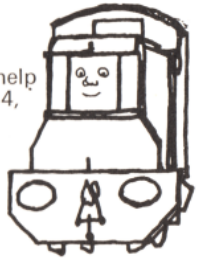
RHENEAS
Gallant Old Engine
He is in books 10, 17, 19, 20, 25

SIR HANDEL
another little engine on the Skarloey Narrow Gauge Line is in books 10, 14, 17, 19, 20, 25



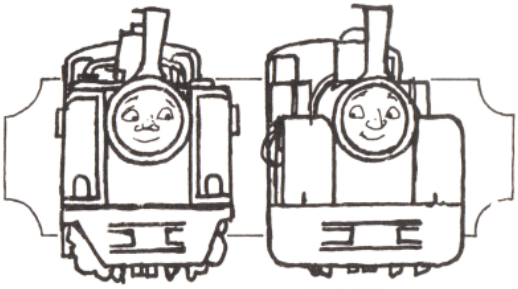
PETER SAM
is in books 10, 14, 17, 20, 25

DUNCAN
is in books 14, 17, 19, 20, 25

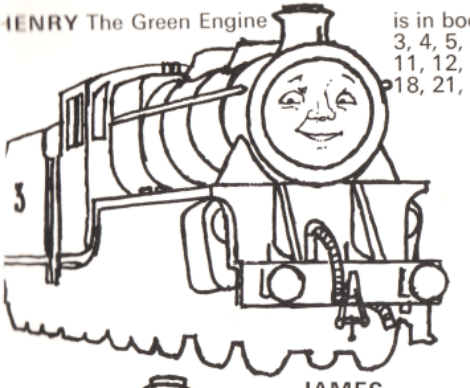


RUSTY
comes to help in books 14, 17 and 20

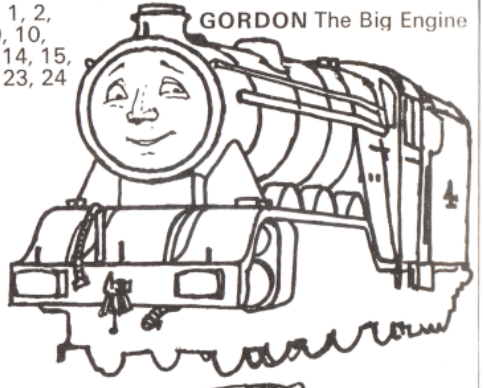
DUKE
The Lost Engine is in book 25



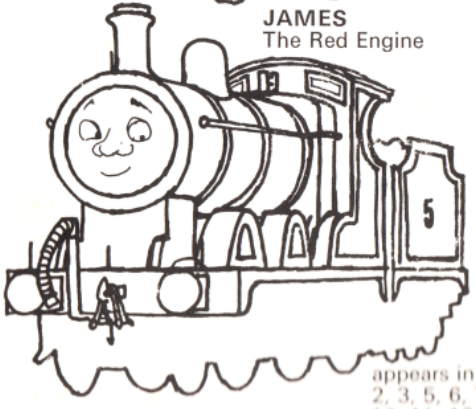
CULDEE **PATRICK**
Two of the Mountain Engines in book 19



HENRY The Green Engine
is in books 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 18, 21, 22, 23, 24

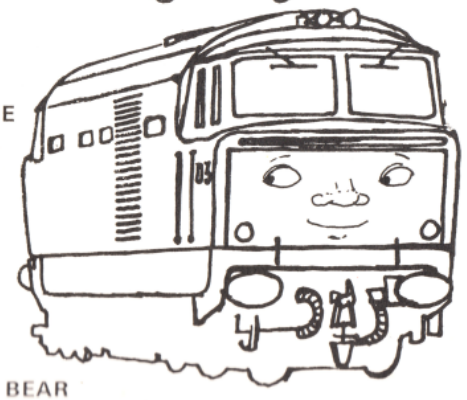


GORDON The Big Engine
is in books 1, 2, 3, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 18, 21, 22, 23, 24



JAMES
The Red Engine
appears in books 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18, 21, 22, 23 and 24

1 THE THREE RAILWAY ENGINES
2 THOMAS THE TANK ENGINE
3 JAMES THE RED ENGINE
4 TANK ENGINE THOMAS AGAIN
5 TROUBLESOME ENGINES
6 HENRY THE GREEN ENGINE
7 TOBY THE TRAM ENGINE
8 GORDON THE BIG ENGINE
9 EDWARD THE BLUE ENGINE
10 FOUR LITTLE ENGINES
11 PERCY THE SMALL ENGINE
12 THE EIGHT FAMOUS ENGINES
13 DUCK AND THE DIESEL ENGINE
14 THE LITTLE OLD ENGINE
15 THE TWIN ENGINES
16 BRANCH LINE ENGINES
17 GALLANT OLD ENGINE
18 STEPNEY THE "BLUEBELL" ENGINE
19 MOUNTAIN ENGINES
20 VERY OLD ENGINES
21 MAIN LINE ENGINES
22 SMALL RAILWAY ENGINES
23 ENTERPRISING ENGINES
24 OLIVER THE WESTERN ENGINE
25 DUKE THE LOST ENGINE
26 TRAMWAY ENGINES



BEAR
helps out on the Main Line in book 23

ANSWERS TO PROBLEM PAGE (page 21)

There are at least twenty problems facing the Fat Controller, and perhaps you can spot a few more! To begin with, what way was the wind blowing on February the—what was it, *thirtieth*? By the way, which months have twenty-eight days? How did three engines get in two sheds? How many tracks are they on? And how many tracks go into the far platform?

The big signal is the wrong colour for a distant signal and the wrong way round; the telegraph pole has its insulators up the wrong way and is perched on the Fat Controller's head; the other pole seems to be taking root. The signal pole has the ladder props of the telegraph, and the telegraph pole has the platform of the signal. The far signal has one end of the gantry on the track, but the signalman won't notice, his box isn't facing the line, anyway. And is he really walking down those steps? It's not done to fill your kettle from the water-pipe, but where is the water coming from? It certainly shouldn't be going down James's funnel, anyway. Truck height bars aren't usually hung from the water-stand, and they aren't much good unless they hang over the track. The gradient board on the other side of the track doesn't seem to have the level level, and which way is the building behind facing?

Why is Percy wearing a nameplate marked "Henry"? He seems a little confused this morning, for steam is coming from his dome, his buffers are on his sandboxes, his cab is on sideways and his wheels are on top of his footplate! Gordon's nose is out of joint, for he has sprouted two funnels, and his crew are in the firebox. No trains are likely to leave today, for the guard is waving off the sheds instead, with a yellow flag. The Fat Controller isn't concerned. He's still trying to count the bars on the porter's trolley!

Which months have twenty-eight days? All of them!

ANSWERS TO SHUNTING PUZZLES (pages 4 and 5)

PUZZLE I

Toby goes back over points 2, and then forward on to the loop. He pushes truck A and truck B forward on to Main Line at points 1. He couples to truck A and pulls it back to depot A; then uncouples, leaving it there. He goes back round the loop to points 2 and the Main Line, then forward over points 2 and 1 to couple up with truck B. Back again with truck B and over points 2; forward again to loop line and depot B where he uncouples truck B. Last of all, back by points 2 to Main Line; then he couples to Henrietta and Elsie and away he goes.

PUZZLE II

Percy goes forward to siding E, then back over points 2, 3, 4, and 5 to siding D, where he couples to the brakevan; forward again over points 5, and back to siding B where he couples the coal truck to the brakevan; back again with both to siding D, and uncouples the coal truck.

Forward again and back to siding B where he couples the oil tanker to the brakevan. He takes both to siding D where the tanker is coupled to the coal truck. Forward over points 5, 4, 3, and 2 *until coal truck is clear of points 4*; then back over points 4 and 1 to the Main Line.

Then forward over points 1 to the platform. Uncouple; then by way of points 2 and 3 to siding A. Couple up to the vans; pull them out to the Main Line over points 3, 4, and 1; push them gently along the platform line, couple up and when the signal goes Percy is away.

PUZZLE III

Rheneas draws back, well clear of the Quarry Siding points.

Peter Sam uncouples Cora, then draws forward over the points with *four* coaches, *leaving Cora behind*. Then with his four coaches he backs into the siding, leaving Main Line clear except for Cora.

Rheneas pulls his train forward over the points. *Cora is coupled to his front*. He waits, until Peter Sam has drawn forward out of the siding and well clear of the points. Rheneas then backs his train over the points; *pushes Cora into siding; uncouples*; backs train clear; and then forward down Main Line to junction.

Peter Sam backs into siding, couples Cora, then forward and away.

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